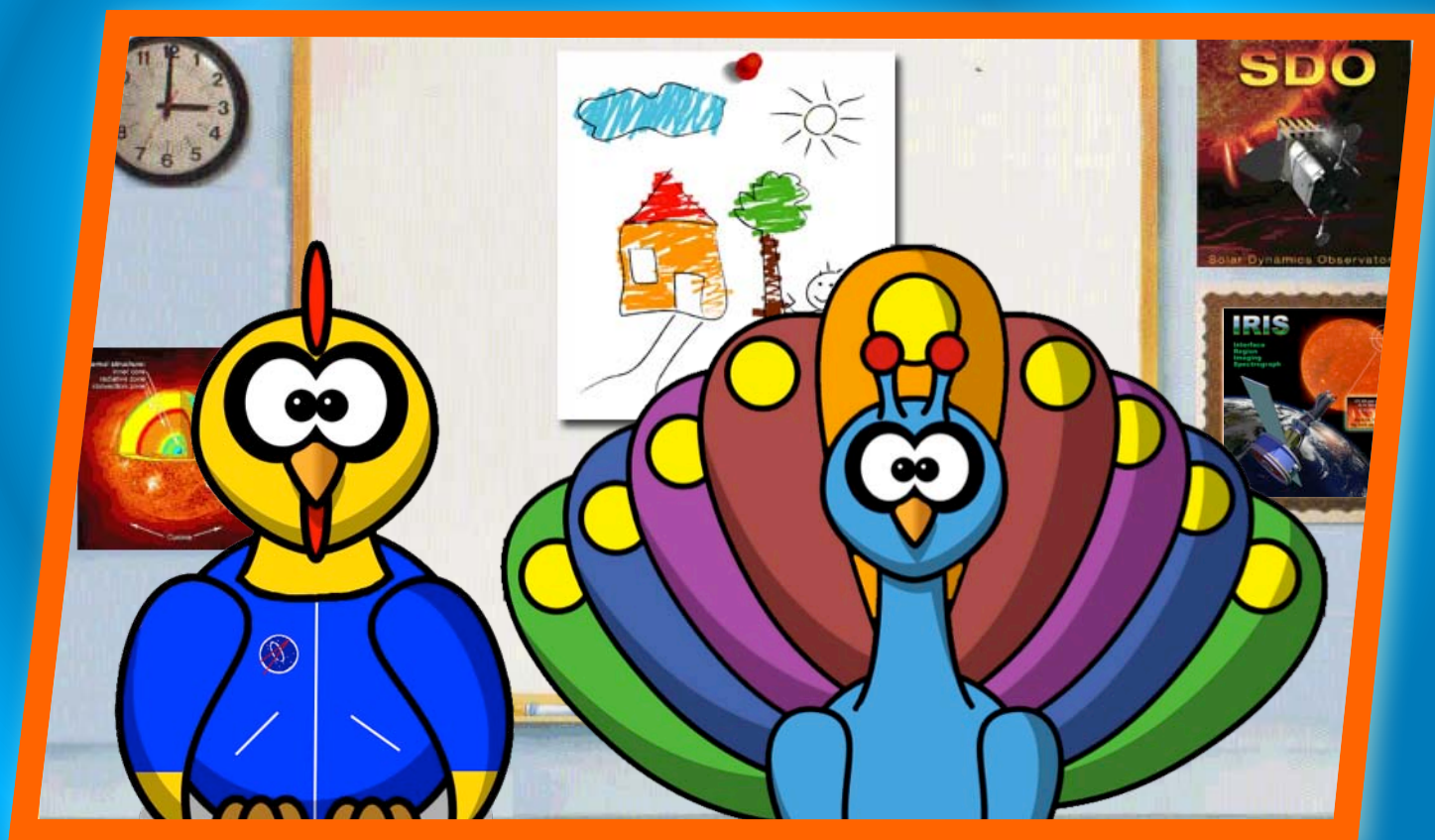


TALES FROM STANFORD SOLAR



WHAT COLOR IS THE SUN?

FEATURING CAMILLA CORONA AND COLOURS O'IRIS.

CAMILLA & COLOURS

WHAT COLOR IS THE SUN

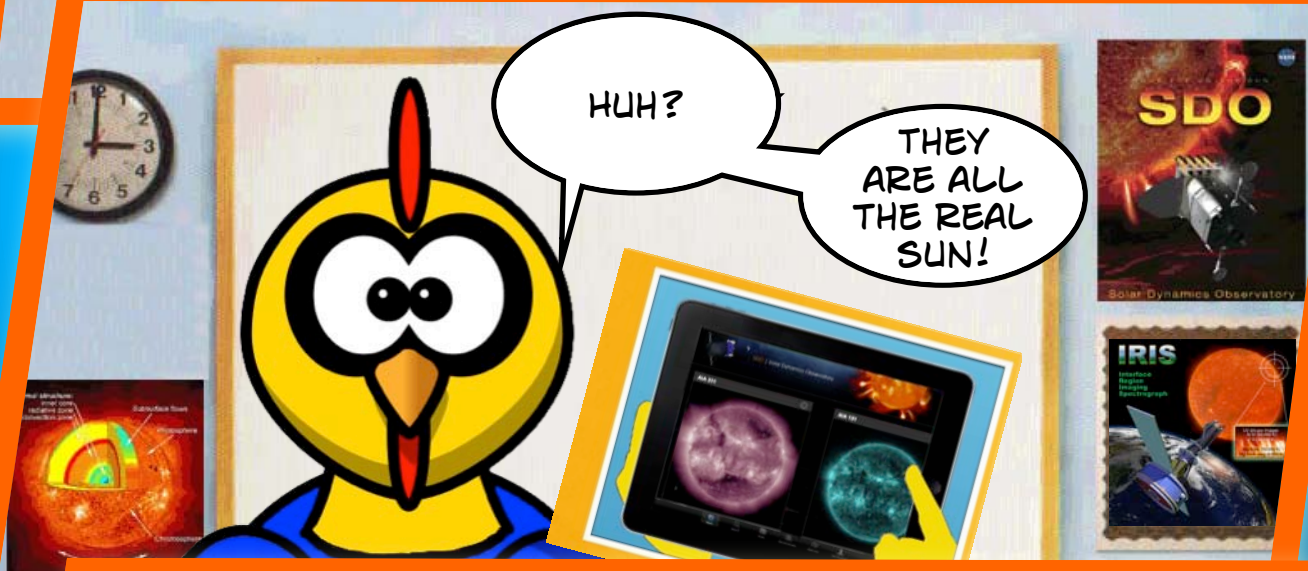
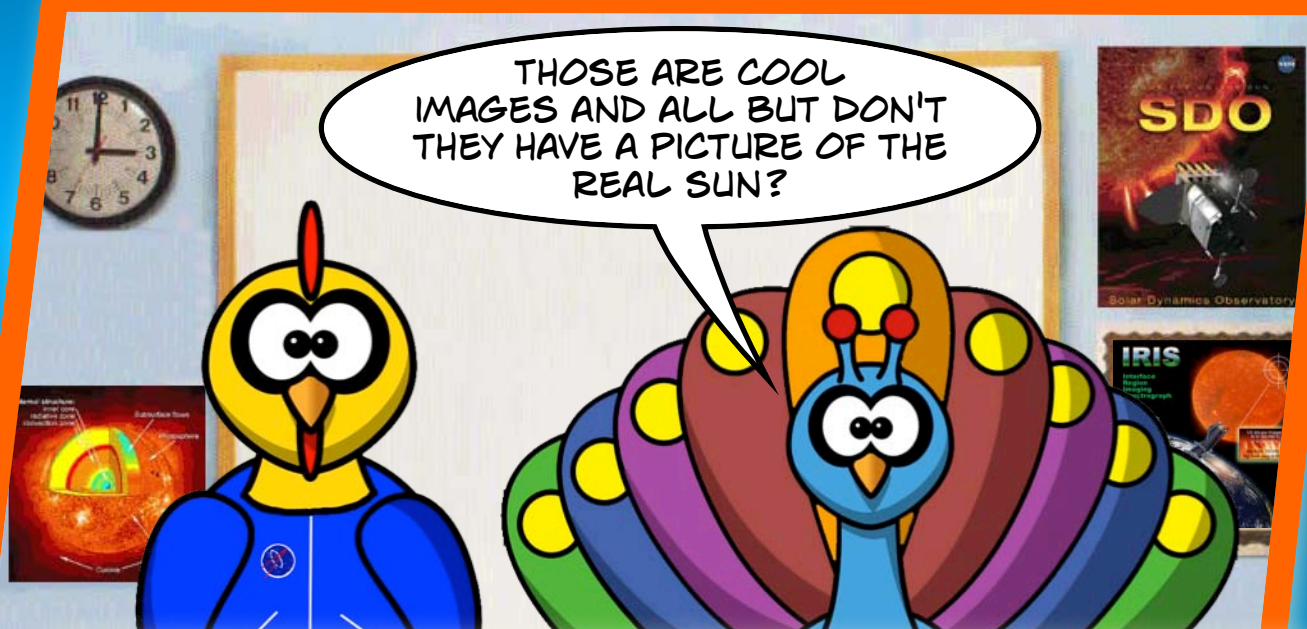
HEY,
COLOURS,
LOOK AT
THESE COOL
PHOTOS OF
THE SUN
FROM
SDO!

WHAT'S
SDO?

CAMILLA'S IPAD...

SDO IS NASA'S SOLAR
DYNAMICS OBSERVATORY
SATELLITE. SCIENTIST USE
SDO TO STUDY THE SUN!

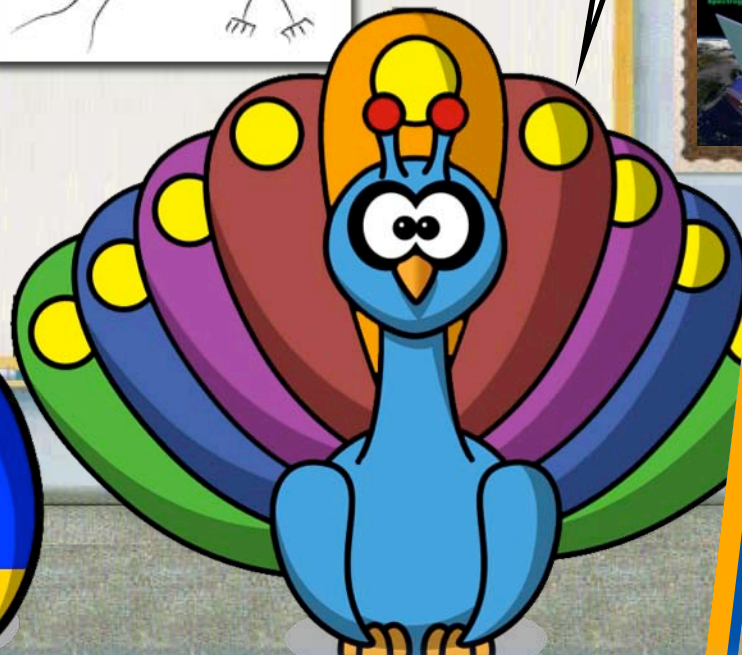
I CAN PULL UP
SDO'S IMAGES
ON MY IPAD!



HEY ME TOO!

WELL THE SUN
ISN'T YELLOW
EITHER.

WHAT?!?!



AT LUNCH IN THE PARK

THE SUN IS ACTUALLY
ALL COLORS OF THE
RAINBOW....

OH, YOU MEAN EACH
SDO PHOTO IS ONE
OF THE SEPARATE
COLORS OF THE
SUN?



WELL, NOT EXACTLY...

YOU'VE SEEN A RAINBOW, RIGHT?

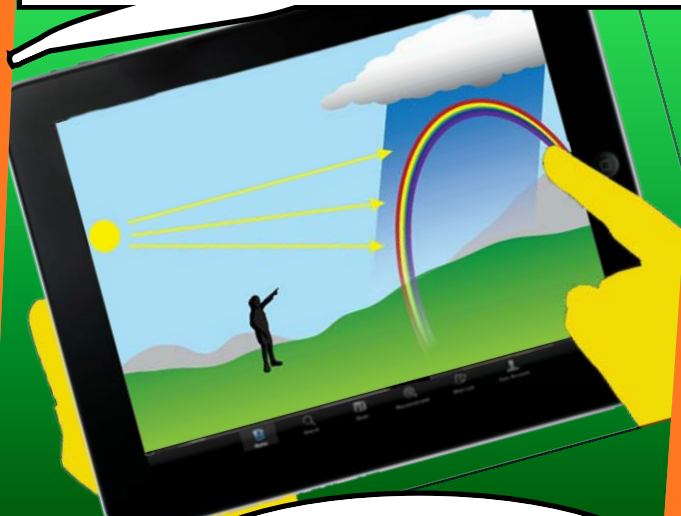


FRUSTRATED -

OF COURSE I'VE SEEN A RAINBOW. IN FACT, I AM A RAINBOW!



RAINBOWS SHOW ALL THE COLORS OF VISIBLE LIGHT, WHICH WE CALL WHITE LIGHT.

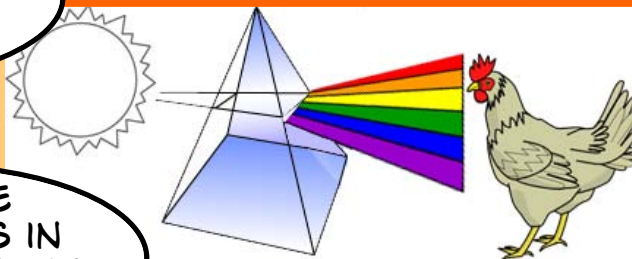


WHY IS VISIBLE LIGHT WHITE?



BECAUSE OUR EYES EVOLVED TO SEE THE

MIXTURE OF COLORS IN VISIBLE LIGHT AS WHITE LIGHT.



BACK IN THE CLASSROOM

BUT WHEN I MIX ALL COLORS OF PAINT TOGETHER, I GET ICKY BROWN?

YES, BECAUSE PAINTS ARE MADE OF PIGMENTS (MATTER) NOT LIGHT (ENERGY), SO THEY WORK DIFFERENTLY.

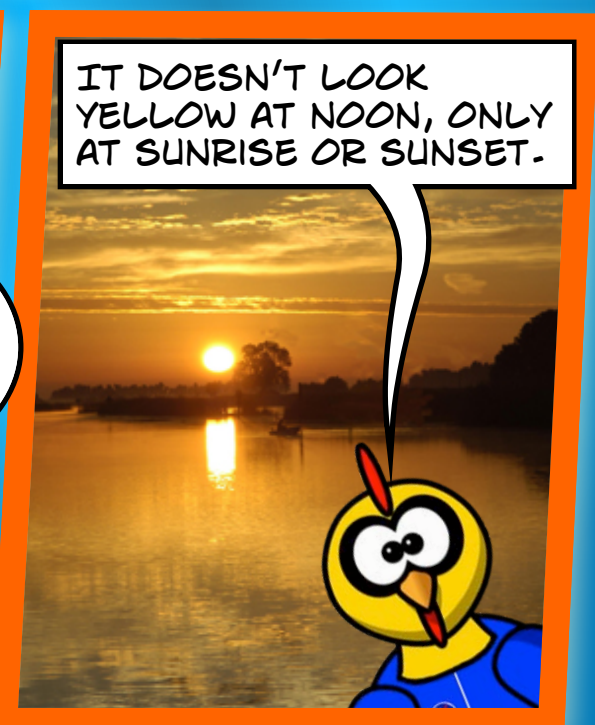
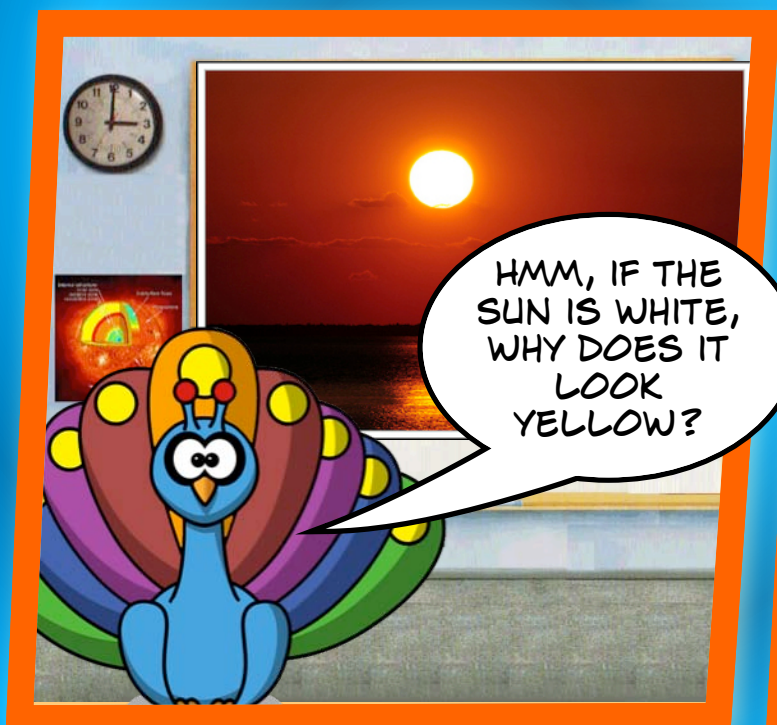
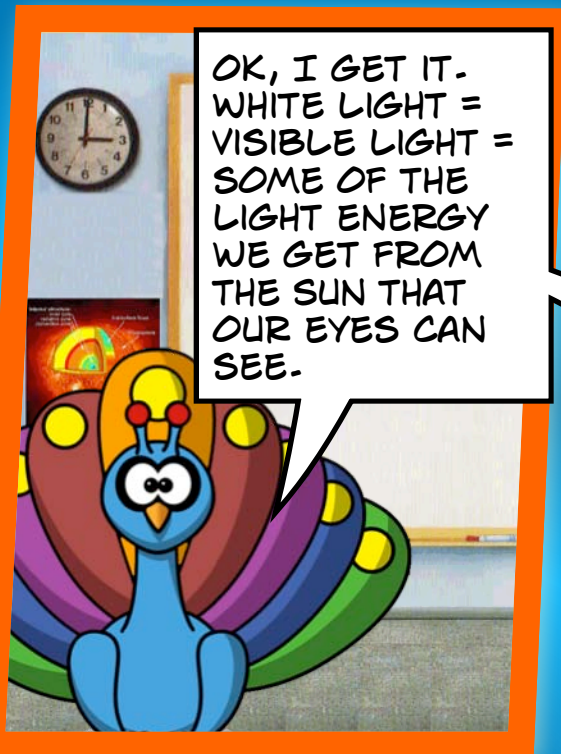


OK, SO MIXED PAINT = BROWN, BUT MIXED COLORS OF LIGHT = WHITE...??



THE SUN PRODUCES ENERGY, WHICH IS DIFFERENT FORMS OF LIGHT. LIGHT THAT WE CAN SEE WITH OUR EYES IS CALLED VISIBLE LIGHT AND IT LOOKS WHITE TO US. THAT'S WHY THE CLOUDS ARE WHITE, AND THE MOON.





AT SUNSET OR SUNRISE THE SUN CAN APPEAR VERY RED. THIS IS BECAUSE IN THAT POSITION THE LIGHT IS TRAVELING A LONG WAY THROUGH THE ATMOSPHERE WHICH THEN SCATTERS AWAY A LOT OF THE BLUE LIGHT AND JUST LEAVES THE RED LIGHT TO REACH OUR EYES.

COOL HUH!

COLORS HAVE WAVELENGTHS -- JUST LIKE WAVES AT THE BEACH CAN BE LARGE OR SMALL.

LIKE THESE BIG WAVES, THE COLORS RED AND ORANGE HAVE LONG WAVELENGTHS.



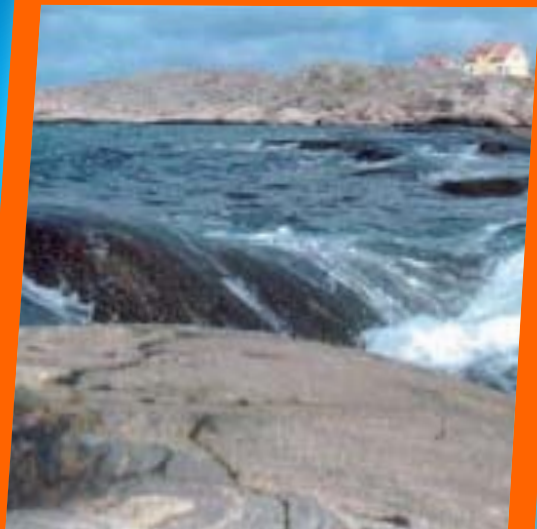
LIKE THESE SMALL WAVES, THE COLORS BLUE AND VIOLET HAVE SHORT WAVELENGTHS.



WHEN LITTLE WAVES (SHORT WAVELENGTH) HIT BIG ROCKS, THEY GET SCATTERED IN ALL DIRECTIONS AND NEVER REACH SHORE.



WHEN BIG WAVES (LONG WAVELENGTH) HIT THOSE SAME ROCKS, THEY ROLL RIGHT OVER THEM.



WHEN SUNLIGHT GOES THROUGH THE EARTH'S ATMOSPHERE, THE AIR MOLECULES ACT LIKE ROCKS WITH THE OCEAN WAVES.

SUNLIGHT AT NOON GOES THROUGH VERY LITTLE ATMOSPHERE, HENCE NOT TOO MANY "ROCKS". SO MOST COLORS (EXCEPT BLUE) GET THROUGH AND THE SUN LOOKS WHITE.



WHY NOT
BLUE?

BLUE IS A VERY SHORT WAVELENGTH COLOR. WHEN IT HITS THE AIR MOLECULES, IT GETS SCATTERED AWAY JUST LIKE THE LITTLE OCEAN WAVES DO.



SO THE
BLUE GETS
LOST?

AH, NOT ALL OF IT GETS LOST. SOME OF IT GETS STUCK IN THE UPPER ATMOSPHERE, BOUNCING AROUND. THAT CAUSES OUR BLUE SKY!

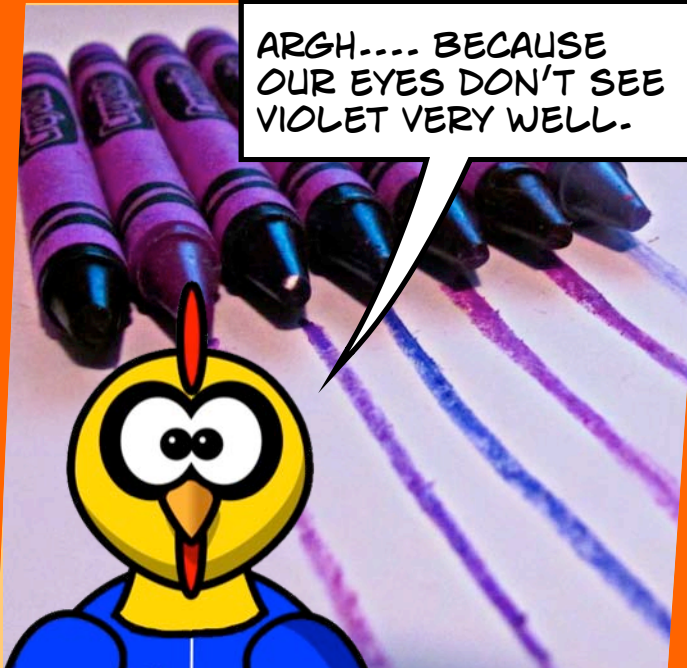


COOL - THE BLUE SKY COMES FROM SHORT- WAVELENGTH BLUE LIGHT HITTING AIR MOLECULES AND BOUNCING AROUND IN OUR UPPER ATMOSPHERE!

BUT IF VIOLET IS THE SHORTEST WAVELENGTH OF LIGHT, WHY ISN'T THE SKY VIOLET?



ARGH.... BECAUSE OUR EYES DON'T SEE VIOLET VERY WELL.



OK, SO BLUE AND VIOLET BOTH GET SCATTERED AROUND IN OUR UPPER ATMOSPHERE, BUT OUR EYES CAN'T SEE THE VIOLET....



BACK TO THE COLORS OF THE SUN -- AT SUNRISE OR SUNSET, THE SUNLIGHT HAS TO GO THROUGH A LOT OF AIR. THE ONLY COLORS THAT GET THROUGH THE LONG "ROCKY" ATMOSPHERE ARE REDS, ORANGES, AND YELLOWS (LONG WAVELENGTHS).



WHAT YOU CALL AN "AHA" MOMENT!!

OK, SO THE SUN IS REALLY WHITE. AND WHITE LIGHT IS MADE UP OF ALL COLORS OF THE RAINBOW.

WHEN LIGHT FROM THE SUN COMES THROUGH THE EARTH'S ATMOSPHERE IN THE MIDDLE OF THE DAY, MOST OF THE COLORS GET THROUGH AND THE SUN LOOKS WHITE. HOWEVER, SOME OF THE SHORT-WAVELENGTH BLUE GETS STUCK BOUNCING AROUND IN THE UPPER ATMOSPHERE CAUSING OUR BLUE SKY.



HOWEVER, AT SUNRISE OR SUNSET, ALL THE SHORT WAVELENGTH COLORS HIT THE MOLECULES IN THE AIR AND GET SCATTERED AWAY. SO ONLY THE LONG WAVELENGTH COLORS LIKE RED, ORANGE, AND YELLOW GET THROUGH.

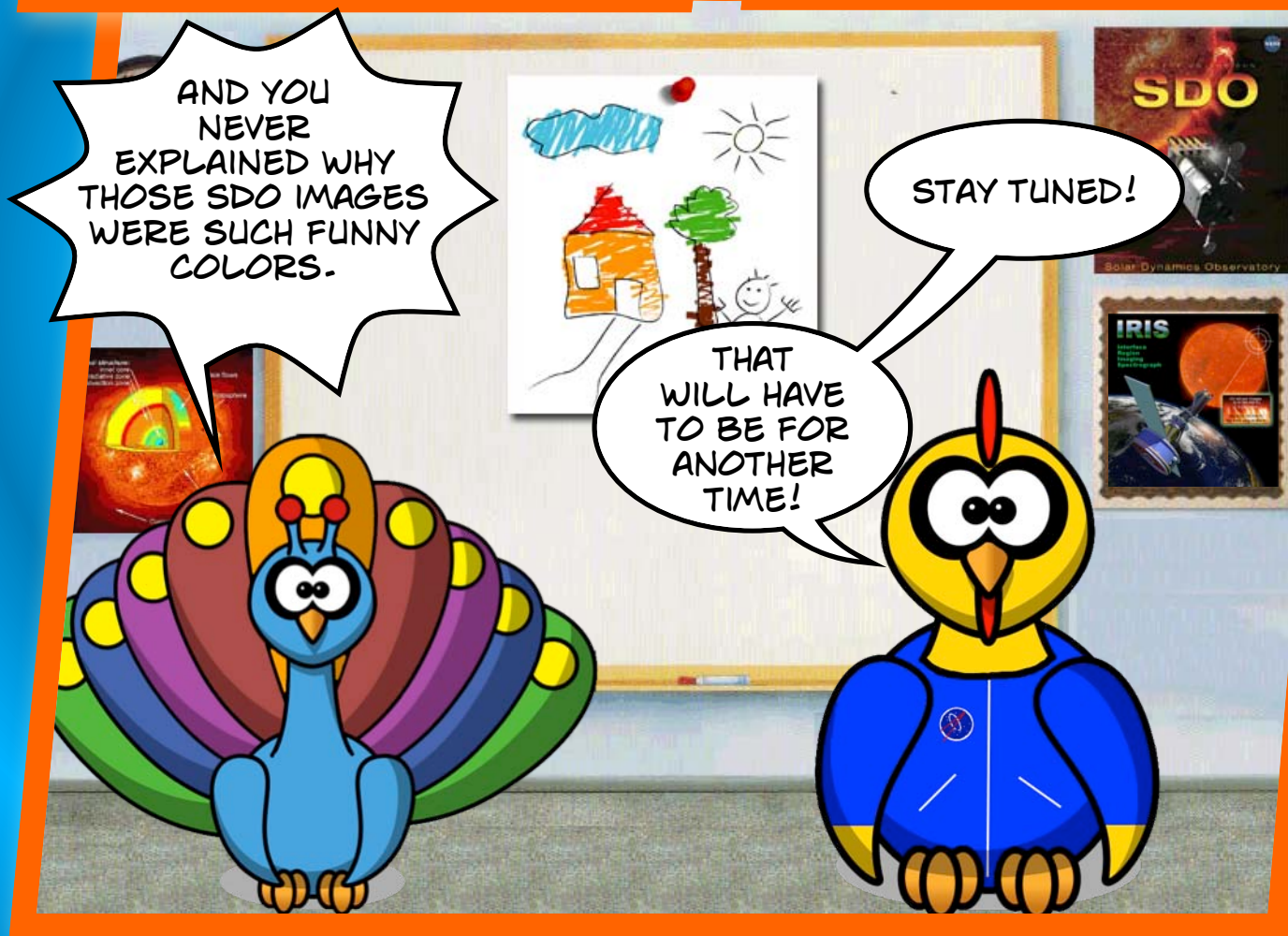
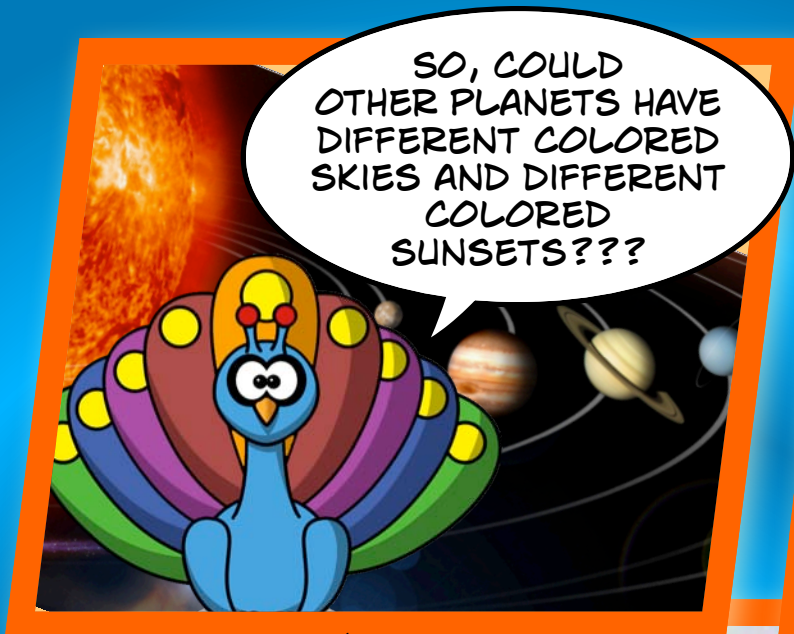
I GET IT!!!!



WHEW!



YEAH!!!!



MORE TALES FROM STANFORD SOLAR AT -

[HTTP://SOLAR-CENTER.STANFORD.EDU/](http://solar-center.stanford.edu/)

FOLLOW CAMILLA AND COLOURS!



SOLAR RESOURCES

WOULD YOU LIKE TO LEARN MORE ABOUT THE SUN?
HERE ARE SOME GREAT LINKS TO CHECK OUT!

FOR STUDENTS:

THE STANFORD SOLAR CENTER
HAS A LARGE COLLECTION OF
ACTIVITIES, VIDEOS AND IMAGES
TO EXPLORE

[HTTP://SOLAR-
CENTER.STANFORD.EDU/
ACTIVITIES/GREENSUN.HTML](http://solar-center.stanford.edu/activities/greensun.html)

FEATURES OF THE SUN

A GREAT INTERACTIVE GAME WHERE
YOU ARE A SOLAR SCIENTIST!

[HTTP://LASP.COLORADO.EDU/HOME/
EDUCATION/K-12/PROJECT-SPECTRA/
SOLARFEATURES-INTERACTIVE/](http://lasp.colorado.edu/home/education/k-12/project-spectra/solarfeatures-interactive/)

SPACE WEATHER CENTER

LOTS OF GREAT GAMES AND FUN
ACTIVITIES

[HTTP://
WWW.SPACEWEATHERCENTER.ORG/
ACTIVITY_PAGE/01/01.HTML](http://www.spaceweathercenter.org/activity_page/01/01.html)

FOR TEACHERS:

**THE STANFORD SOLAR
CENTER** HAS A LARGE
COLLECTION OF LESSONS,
MOSTLY 4-12

[HTTP://SOLAR-
CENTER.STANFORD.EDU/TEACHERS/](http://solar-center.stanford.edu/teachers/)

SDO FOR EDUCATORS

ELEMENTARY AND SECONDARY
LEARNING UNITS

[HTTP://SDO.GSFC.NASA.GOV/
EPO/EDUCATORS/](http://sdo.gsfc.nasa.gov/eopo/educators/)

NOVA'S SUN LAB

GREAT LESSONS AND STUDENT
ACTIVITIES

[HTTP://WWW.PBS.ORG/WGBH/
NOVA/LABS/LAB/SUN/](http://www.pbs.org/wgbh/nova/labs/lab/sun/)

OUR STAR THE SUN

COLLECTION OF SUN-THEMED
CLASSROOM RESOURCES FROM
NASA'S SOLAR AND
HELIOSPHERIC OBSERVATORY

[HTTP://
SOHOWWW.NASCOM.NASA.GOV/
CLASSROOM/CLASSROOM.HTML](http://sohowww.nascom.nasa.gov/classroom/classroom.html)

TALES FROM STANFORD SOLAR

STORY: DEBORAH SCHERRER AND EMILY KELLAGHER

DESIGN: EMILY KELLAGHER

WHAT COLOR IS THE SUN?

THE 1ST INSTALLMENT OF "TALES FROM STANFORD SOLAR", A COMIC BOOK SERIES ADDRESSING MISCONCEPTIONS AND TOPICS IN SOLAR SCIENCE.

FEATURING CAMILLA CORONA AND COLOURS O'IRIS.

PROJECT COLLABORATION:

STANFORD SOLAR CENTER
[HTTP://SOLAR-CENTER.STANFORD.EDU/](http://solar-center.stanford.edu/)



CIRES EDUCATION OUTREACH
[HTTP://CIRES.COLORADO.EDU/](http://cires.colorado.edu/education/outreach/)
EDUCATION/OUTREACH/

